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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
XU HE, ET AL.	: EXAMINER: EGWIM, K. C.
SERIAL NO: 10/553,793	:
FILED: OCTOBER 18, 2005	: GROUP ART UNIT: 1796
FOR: POLYMER DISPERSION WITH A COLOUR EFFECT	:

NEW PETITION UNDER 37 C.F.R. §§ 1.181 AND 1.183

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicants respectfully petition from the Examiner's withdrawal of Claims 11-16, 21 and 25 from consideration in the Final Rejection dated October 23, 2009 (new Final Rejection.)

BACKGROUND

Applicants filed a first petition under 37 CFR §§ 1.181 and 1.183 on May 21, 2009, also petitioning from the Examiner's withdrawal of Claims 11-16, 21 and 25 from consideration. In a decision on petition entered August 3, 2009, the petition was granted. The basis appears to be that since the present application is a national stage application, the Examiner's justification for the withdrawal of claims should have been based on unity of invention principles. The decision directed the Examiner "to issue a new office action incorporating the claims that were withdrawn from consideration. If upon consideration, the Examiner feels that a lack of unity of invention exists with the newly-amended claims, the

Examiner should clearly demonstrate this in the new office action and may then consider withdrawing the claims from consideration."

In the new Final Rejection, the Examiner continues to withdraw the above claims from consideration, finding a lack of unity of invention.

STATEMENT OF FACTS

Prior to the amendment filed December 19, 2008 (Amendment), Claim 11 read as follows:

> The process as claimed in claim 1, wherein a transparent polymer layer is applied to the colored polymer system.

This version of Claim 11 was examined on the merits, with all other pending claims. In said Amendment, Claim 11 was amended as follows:

> The process as claimed in claim 1, wherein a transparent polymer layer is applied to the ~~colored polymer system~~ polymeric film.

The amendment to Claim 11 is consistent with the amendment to Claim 1 in the Amendment, which further clarified the invention, and particularly that the colored polymer system meant a polymeric film that produces a visual effect upon reflection of electromagnetic radiation.

The Examiner continues to find that Claims 11-16, 21 and 25 are directed to an invention that is independent or distinct from the original invention because Claim 11, and the other claims, all of which depend on Claim 11,

> now clearly requires a multi-layered product/process prepare [sic] from the intermediate product of the originally presented single film and process for preparing the single film of [Claims] 1-10, 17, 18, 20, 22-24 and 26-32.

The Examiner then finds that:

> The originally presented intermediate product film/process is not so linked to the newly claimed multi-

> layered product/process .to form a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding "special" technical features for the following reasons: Claim 1, at least is anticipated by or obvious over Hoshino et al., Bardman et al., and/or Gharapetian etal. and thus, the common matter of the inventions is well known. Consequently, the technical feature which links the claims, the single film from the process of claim 1, does not provide a contribution to the prior art is it is not a "special technical feature", and so unity of invention is lacking.

ARGUMENT

Applicants' argument in the first petition still applies and is repeated herein, with modifications where appropriate.

Applicants traverse the withdrawal of the above-identified claims from consideration, since Claim 11, even before the Amendment, was drawn to the formation of a multi-layered product. It is hornbook law that claims are to be construed in light of the specification. When read in light of the specification, it is clear that the invention recited in present Claim 11 is not independent and not distinct from the invention recited in Claim 11 prior to the Amendment but is, in essence, the same invention. In addition, among the above-identified claims, while Claim 25 is identified as a new claim, its subject matter is supported by Claim 17, which has been examined with the other claims prior to the Amendment and which has not been withdrawn from consideration.

While the above is sufficient to demonstrate error in the Examiner's action, Applicants add that restriction is not proper if search and examination of an entire application can be made without serious burden, even though it may include claims to distinct or independent inventions, or even though it may include claims lacking unity of invention. No showing of serious burden has been made by the Examiner. Note that the first Office Action on the merits was of all pending claims.

In addition, notwithstanding that the above-discussed amendment to Claim 11 did not change its scope from single film to multi-layer film, it is clear that even if the present claims were original claims and were not previously examined, unity of invention still exists.

The withdrawn claims are drawn to an embodiment wherein a transparent film is applied to the inventive polymeric film after the step of forming the inventive polymeric film is carried out. Indeed, it is the step of forming the inventive polymeric film, as recited in Claim 1, which is the "special technical feature" which defines the present invention over the applied prior art.

The Examiner identifies the "special technical feature" as "the single film from the process of claim 1," but simply stating that US 5,273,824 (Hoshino et al), US 2002/0072560 (Bardman et al) and/or US 5,229,209 (Gharapetian et al) disclose it does not make it so. Indeed, none of the references disclose or suggest it, as discussed below.

Hoshino et al discloses a cored multi-shell emulsion particle which forms layers of different refractive indexes, said particle having a diameter D of from 0.1 to 5.0μ and including therein a core particle and a void layer which exists in the exterior of said core particle, the ratio of the diameter Φ of the core particle to D and the ratio of the diameter d of the void layer to D being in the range, respectively:

$\Phi/D=0.1\text{-}0.6$

$d/D=0.2\text{-}0.8$

wherein $d > \Phi$ (column 3, line 54ff), which emulsion particle can be accomplished by providing the above cored multi-shell emulsion particle obtained by the steps of conducting emulsion polymerization of a vinyl monomer (a) to obtain a polymer (A) as a core particle, adding thereto a vinyl monomer (b) which yields a polymer capable of swelling with an alkaline material, conducting emulsion polymerization to form an exterior layer composed of a polymer (B), followed by adding a vinyl monomer (c), conducting emulsion polymerization

to form the polymer (C), treating a resulting multi-layer-structured emulsion particle with an alkaline material to swell the polymer (B), and drying the swelled particle thus obtained, or can be accomplished by providing the above cored multi-shell emulsion particle obtained by further adding a vinyl monomer (d) after swelling the above polymer (B), conducting emulsion polymerization to form a polymer (D) as an exterior layer of the polymer (C), and drying the emulsion particle thus obtained (column 4, lines 1-20).

Bardman et al discloses a process for forming an aqueous multimodal polymeric dispersion including at least two emulsion polymers of differing particle diameter, at least one of which emulsion polymers includes a core and at least two shells, the first shell having a glass transition temperature greater than 50°C and the outermost shell having a Tg from 10°C to -50°C and contains at least one void [0001]. In a first embodiment, Bardman et al's process includes (1) forming emulsion-polymerized multistaged first polymer particles having (a) a hydrophilic core polymer formed from 5% to 100% by weight, based on the total weight of the core polymer, of a hydrophilic monoethylenically unsaturated monomer and from 0% to 95% by weight, based on the total weight of the core polymer, of at least one nonionic monoethylenically unsaturated monomer; (b) a first shell polymer formed from 90% to 99.9% by weight, based on the total weight of the first shell polymer, of at least one nonionic monoethylenically unsaturated monomer and from 0.1% to 10% by weight, based on the total weight of the first shell polymer, of an acid functional monoethylenically unsaturated monomer, wherein the first shell polymer fully encapsulates the core polymer, wherein the ratio of the weight of the core polymer to the weight of the first shell polymer is from 1:2 to 1:100, and wherein the first shell polymer has a glass transition temperature greater than 50°C and (c) a second shell polymer formed from 93% to 99.9% by weight, based on the total weight of the second shell polymer, of at least one nonionic monoethylenically unsaturated monomer and from 0.1% to 7% by weight, based on the total

weight of the second shell polymer, of an acid functional monoethylenically unsaturated monomer, wherein the second shell polymer is formed in the presence of the first shell polymer, and wherein the second shell polymer has a glass transition temperature from 10°C to -50°C, and wherein the second shell polymer is at least 10% by weight of the total weight of the first shell polymer and the second shell polymer; (2) forming a second emulsion polymer in the presence of the first emulsion polymer by (a) adding, after the core polymer has been formed, an amount of surfactant sufficient to generate new particles or an emulsion-polymerized seed latex having a particle diameter less than 200 nanometers to the polymerization; (b) then adding any remainder of the first shell polymer monomer mixture and then any remainder of the second shell polymer monomer mixture and from 0 to 90% by weight, based on the weight of the solids of the aqueous polymeric dispersion, of at least one ethylenically unsaturated monomer; (3) effecting polymerization of at least 95% of all added monomer by weight based on the weight of the solids of the aqueous polymeric dispersion; and (4) neutralizing the aqueous dispersion formed with a base so as to swell the core and form particles which, when dry, contain a void [0007]. In a second embodiment, an emulsion polymer is not formed in the presence of the other emulsion polymer [0008].

Gharapetian et al discloses a process for the manufacture of vesiculated core-shell particles comprising forming an aqueous emulsion of at least one ethylenically unsaturated monomer with acid functionality, polymerising said unsaturated monomer to form core particles of polymer; forming an aqueous dispersion of said core particles and a monomer mixture of a nonionic monoethylenically unsaturated aromatic monomer and a copolymerisable polar monomer in an amount of at least 15 per cent by weight of the total weight of the monomer mixture and said copolymerisable polar monomer having a solubility in water at 20°C of at least 1 per cent by weight; polymerising said monomer mixture to form a first shell on said core particles; adding to an aqueous dispersion of said core particles

having a first shell a further nonionic monomer which has a solubility in water at 20°C of less than 1 per cent by weight and polymerising said further monomer to form a second shell on the said particles, and mixing the core/shell particles so obtained with a non-volatile fixed or permanent base to swell the cores and generate therein one or more vesicles (column 1, lines 44-68).

All of the above-applied prior art can be characterized as disclosing processes for making core/multi-shell particles having at least a void layer therein. However, none of Hoshino et al, Bardman et al or Gharapetian et al disclose or suggest the particular relationship of the monomers used to make their respective core and shell layer(s), or the production of an aqueous film which, when water is removed, produces a polymeric film with a visual effect upon reflection of electromagnetic radiation, or which polymeric film comprises a matrix (formed from the shell) and discrete polymer particles (formed from the core) distributed in the matrix, all as required by the present claims.

Thus, the Examiner has not demonstrated lack of unity of invention.

Applicants further petition under 37 C.F.R. § 1.183 that any requirement of a Request for Reconsideration of the Examiner's action as discussed above, be waived, given the "after Final" status of this application. Such a requirement would only delay resolution of the substantive issues raised in the Office Action.

CONCLUSION

For all the above reasons, it is respectfully requested that the Examiner's withdrawal of Claims 11-16, 21 and 25 from consideration be vacated, and that an examination on the merits be caused to be conducted on said claims.

Respectfully submitted,

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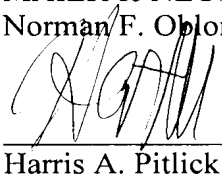

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